

Video Players Enhance Warfighter Communications

A novel application of a commercial off-the-shelf (COTS) video entertainment device is allowing small numbers of U.S. Army warfighters to deploy into Iraq and Afghanistan with greatly expanded communications capabilities. Called the Vcommunicator Mobile LC, the device is based on both standard and nano video versions of the Apple iPod.

By Scott R. Gourley



Photographs: PEO STRI

The Vcommunicator, a commercial off-the-shelf device based on both the standard and nano video versions of the Apple iPod, gives soldiers in Iraq and Afghanistan language translation capability as a handheld tool.



The systems and supporting software package are being provided by Vcom3D, under contract to the Program Executive Office (PEO) for Simulation, Training and Instrumentation (STRI). According to Cory Youmans, project officer at PEO STRI, the program evolved after representatives from the U.S. Army's 10th Mountain Division (Light Infantry) saw some notional prototype hardware at a December 2006 training exhibition.

Youmans explained, "The 10th Mountain [Division] came to PEO STRI in April [2007] with an urgent need statement, saying, 'We have an urgent requirement for a one-way language translation capability. Can you help us?' As an acquisition agency, we went through the steps to find out what products were available in the marketplace—conducting market surveys, doing Internet searches and the like—and we could only find one product and one vendor that met all of the operational requirements identified by 10th Mountain."

The selected vendor was Vcom3D, based in Orlando, Fla. Company president and CEO Carol Wideman remembers taking an early prototype to various Army bases: "We went around and talked to soldiers—sergeants and some officers—and got their feedback, together with a greater understanding of what it is like to be [deployed] and what they really needed," she said.

"And they would say things like, 'I am interacting with an Iraqi citizen and I need to tell him to lie down on the ground. Interpreters are very difficult to come by and I can't get him to understand. So I'm trying to pantomime and communicate with him about what I want him to do.

Finally I had to lay down on the ground to show him what I wanted him to do.' And that made [the soldier] so vulnerable. The whole idea here is to help him not only learn the phrases that he can use on these missions but also have it as a communicator backup so that when [his] interpreter isn't available, [he] still has a way to communicate."

Basing the design on the Apple iPod one-way communications/video device, Vcom3D focused the Vcommunicator capabilities on giving directions to someone as well as asking questions, with the questioning focused to draw one-word answers. The device also has a vocabulary section that gives warfighters all of the possible answers that they might receive.

In June 2007, the company launched its Vcommunicator Authoring Suite, which enables users with little or no animation experience to generate dynamic lifelike virtual characters that automatically lip-synch recorded spoken language. In addition, a follow-on language and culture expansion pack, released in October 2007, provides training in local languages and cultures during downtime or one-way translation during operations in theater.

"When soldiers found out that the authoring tools allowed them to change the mission, they said, 'That seals the deal. Missions change. New phrases come up. There are regional differences. We need to be able to change and update vocabulary and phrases,'" Wideman said.

"Then we pointed out that we could add any kind of visual information, not just the language and cultural gesturing, but things like maps and persons of interest they might be looking for. That person could be another soldier that is missing, or it could be a terrorist they are trying to

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find. They got really excited about that because those are the elements they considered that they needed right now," she added.

Under a July 2007 contract award, the 10th Mountain Division was provided with 260 devices in two segments: 130 for the 1st Brigade Combat Team (BCT), which was being deployed to Iraq; and 130 devices for the 4th BCT, which was being deployed to Afghanistan.

"Time was of the essence. The 1st BCT was preparing to deploy around the end of August," project officer Youmans said. "There was a scramble on the part of the 10th Mountain to find the funds, but once they 'MIPR'd' [military interdepartmental purchase request] the funds to PEO STRI, we awarded a contract a few days after that, and the contract was able to deliver 29 days after contract award, which is a huge success story."

"Obviously that's one of the benefits of buying commercial off-the-shelf. And that's exactly what this device is—a commercial off-the-shelf device available to the military and to anyone commercially," he continued.

The devices can come with two languages. The Iraq-bound 1st BCT received the Iraqi Arabic and Iraqi Kurdish languages loaded onto standard video iPods attached to lanyards.

Wideman noted that a COTS technology development took place following the accelerated deliveries to the 1st BCT in August: The video iPod nano became available in September 2007, and the new smaller packaging now allowed the soldier to carry the same capability on a wrist or forearm.

"That's the great thing about COTS equipment," she explained. "We changed in half a day to be able to deliver it on the video nano. And we gave it to [soldiers] to evaluate, asking them which they wanted. And they chose the video nano, where they can stand with their rifle at the ready and still use this device on their wrist. And that is very powerful."

The video iPod nano devices delivered to the Afghanistan-bound 4th BCT were programmed with the Dari and Pashto languages.

"The good news continues," Youmans said. "We got a phone call from our field service representa-

tive up at Fort Drum, N.Y., with 10th Mountain. They had an MP unit that was preparing to deploy in a couple of weeks, and asked, 'Can you help them? They need some right away.' The day that 10th Mountain got the money to us, we actually awarded a contract to Vcom3D, and they delivered *the next business day*. That was just a huge success story. Again, we were only able to do this because we were buying COTS devices—in this case, Apple iPods."

As noted previously, one of the most popular features of the Vcommunicator Mobile LC device is the authoring tool, which allows units to change content as operational scenarios dictate. According to Ernie Bright, operations manager for Vcom3D, training soldiers to use the authoring tools only takes about six hours. "And then in minutes they can actually add content," he said. "It's very rapid. Once they learn the basics and the fundamentals of our authoring tool, they can rapidly create their own content. We want to make it as simple as possible. We try to use our authoring tool for them to do everything. It was not designed to do some picture imports and things like that, but we wanted only one interface with the soldiers. We didn't want to have to complicate things and layer things. All we need is one application."

To date, 30 soldiers have received the six hours of authoring-tool training, with each of those trained soldiers then "managing" approximately two dozen iPods within the unit.

"It's actually very effective," Bright added. "Because once they create the content they can quickly put it on all of the other iPods. And if someone else wants the content,



The video iPod nano Vcommunicator attaches to the wrist or arm and allows the soldier to keep his rifle at the ready; it also serves as a language-lesson tool.

The Vcommunicator can produce lifelike animated characters that can give directions and ask questions that encourage one-word answers. It can also produce translations in English script and phonetic spellings in English of other languages.



they can either e-mail it to [him or her] or put it on a web site to share it."

"The applications are in the order that a soldier would most likely use them," explained Cindy Barson, Vcom3D's marketing and sales manager. "Once you open one you have choices. For example, animation in [the local] language uses a culturally appropriate gesture that you would use in speaking that phrase to someone in that population. Another option is the script, which can be shown to them so they can read it. You can also do voice. Then, on each page, you also have it in English and in phonetic English. So you can use it with a speaker. You can use it with a megaphone for crowd control or to amplify your message to a larger crowd. You can also use the earbuds, and in your downtime use it as a language-lesson tool."

Demonstrating how the personalization of new content could work, Barson added, "[Soldiers] can add a tactical map if they want to be able to show [the locals] where their target is. That's one type of new content that they can add. You can put a voiceover for whatever you want it to say. There's also a section for persons of interest."

To illustrate the option, Barson used the device's scroll wheel to call up a sample description of Osama bin Laden, noting that "there are other persons of interest that they might be looking for."

As of this writing, Vcom3D hopes to establish an indefinite delivery/indefinite quantity contract with PEO STRI

to facilitate future system deliveries to warfighters, with contractor reports that elements of the 101st Airborne Division have already expressed interest in fielding some of the devices.

Cautioning that he had not received an official contact as of early December 2007, Youmans acknowledged that he had received anecdotal reports of interest, adding, "I would not be surprised if within the next few days or weeks we hear from them."

In terms of expanded fielding potential, it isn't clear how a one-way device would fare in light of ongoing programs like the two-way speech-to-speech capability being sought by the Product Director Signal Warfare of PEO Intelligence, Electronic Warfare and Sensors (IEWs) in Fort Monmouth, N.J.

In the near term, however, Youmans believes that the devices will have a positive impact. Relating his own experiences in theater, he observed, "The practical reality is that there is rarely a translator available when you need one. And sometimes you just need to be able to communicate your intentions clearly to the people you are dealing with. And this device would meet that need very nicely. I wish I had one when I was deployed."

"Of course, one of the questions we have is, 'How effective is the device, which has only been fielded for a few short weeks?' We plan to send a team into country to meet up with the 10th Mountain to do some interviews and surveys, to find out how [the device is] doing. Does it meet their needs? We will generate this operational effectiveness evaluation study sometime in February," he concluded. ★